

TECHNICAL BULLETIN

Bell Helicopter

A Textron Company

No. 429-10-03

Date July 6, 2010

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DATE
REV

MODEL AFFECTED: 429

SUBJECT: VERTICAL LIVE MOUNT P/N 427-310-201-107
SERVICING OF

HELICOPTERS AFFECTED: Model 429 Helicopters serial number 57003,
57005, 57006, 57007 and 57008

[Model 429 helicopter serial numbers 57001,
57002, 57004, 57009 and subsequent will have
the intent of this bulletin accomplished prior to
delivery]

COMPLIANCE: Bell Helicopter recommends accomplishment of
this bulletin.

DESCRIPTION:

Bell Helicopter has received reports of 429 ride quality degradation. Investigation has determined that factory pressure of the Vertical LIVE Mount (s) P/N 427-310-210-107 was insufficient which caused the ride quality degradation.

This bulletin introduces a procedure for verifying and replenishing the Vertical LIVE Mount (s) nitrogen pressure charge while the Vertical LIVE Mounts is installed on aircraft.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

MANPOWER:

Approximately 1.5 man-hours are required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIALS:**Required Material:**

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
30 1084 S 02L 0/400# or equivalent	Manometer 3" diameter 1/4 NPT 0-400 psi	1*,***
1020127 or equivalent	Brass Reduce Connection 1/4 NPT (m) to 1/8 NPT (f)	1*
1020145 or equivalent	Brass T Union 1/4 NPT (f)	1*
1020045 or equivalent	Steel connection fitting 1/4 NPT (m)	1*
1020177 or equivalent	Teflon Tape 1/2 " X 40 "	1*
HLLH-566 or equivalent	High pressure inflation connection 1/8 NPT (m)	1*
HLLHE-371 or equivalent	Valve extension 3 "	1*
AS3209-008	Packing	1*
MIL-V-27317	Valve Core Pin	2
2316C or equivalent	Valve Cap	1**

Note:

* These items are required to locally assemble a Vertical LIVE Mount servicing work aid. Refer to accomplished instructions for buildup details. These parts can be bought locally.

** Valve cap is used as a work aid to remove valve core for cleaning or replace valve core pin due to nitrogen leakage.

*** Manometer manufactured by ASHCROFT USA, www.ashcroft-usa.com

Consumable Material:

The following material is required to accomplish this bulletin; however this material is considered consumable (bench stock) material and may not require ordering depending on the operators' consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
Commercial	Isopropyl Alcohol	A/R	C-285

SPECIAL TOOLS:

Nitrogen supply source 500 PSI remaining minimum.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-429-MM Maintenance Manual

PUBLICATIONS AFFECTED:

BHT-429-MM Maintenance Manual

ACCOMPLISHMENT INSTRUCTIONS:**Assemble Charging Tool for Vertical LIVE Mount Serving (if required)**

1. Assemble the charging assembly work aid as follows using components listed in the material section of the bulletin. Refer to Figure 1 for details.
2. Locate the brass "T" union (3).
3. Apply Teflon tape on threads of steel connection fitting (5) Insert the steel connection fitting (5) in to brass "T" union (3).
4. Apply Teflon tape on threads of brass reducer (2). Insert brass reducer connection (2) on the opposite side of the brass "T" union (3).
5. Apply Teflon tape on threads of manometer (4). Insert manometer (4) on the remaining port of brass "T" union (3).
6. Apply Teflon tape to the inflation connection (1). Insert inflation connection (1) into brass reducer (2).
7. Apply Teflon tape on valve extension (6) threads. Insert valve extension (6) into inflation connection (1).
8. Insert packing (7) into the threaded end of valve extension (6).
9. Tighten all connections and joints.

Initial Pressure Leak Check of Vertical LIVE Mount

1. Remove transmission cowling 600EL and 600ER to gain access to Vertical LIVE Mounts.
2. Remove tamper proof tape (1) and plastic plug (2) and discard. (refer to Figure 2)
3. Remove yellow protective cap (3).

-NOTE-

Examine the charging assembly before use to confirm that:
Pressure gauge reads zero (0) psi, valve depressor pin is retracted (rotate the T handle counterclockwise by hand until it stops), packing (7) is present in the threaded end of the valve extension (6) that connects to the charge valve (9).

4. Ensure the charging assembly is in the ‘closed’ position by rotating the T-handle on the inflation connection (1) counterclockwise until snug.

CAUTION

DO NOT USE THE MANOMETER TO TIGHTEN. DO NOT USE A WRENCH ON ANY OF THE OTHER CONNECTIONS ON THIS ASSEMBLY.

5. Install the charging assembly valve extension end (6) onto the charging valve (9) by rotating it clockwise by hand until snug, and then tighten an additional $\frac{1}{4}$ turn by hand. (Refer to figure 1).
6. Attach the nitrogen supply to the connection fitting (5).
7. Open the valve on the nitrogen supply and adjust nitrogen supply regulator until manometer (4) reads between 150 to 175 psi. No stabilization time is necessary for this check.

CAUTION

IF PRESSURE EXCEEDS 450 PSI, THE VERTICAL LIVE MOUNT MAY BE DAMAGE AND SHOULD BE REPLACED.

8. Slowly depress the charging valve core pin (8) by rotating the T-handle on the inflation connection (1) clockwise by hand until it stops.
9. After 10 to 15 seconds, rotate the T-handle on the inflation connection (1) counterclockwise by hand until it stops.
10. Close nitrogen supply valve and remove nitrogen supply from charging assembly.
11. Remove the charging assembly from the Vertical LIVE Mount by using a wrench on the lower hex of valve extension (6).
12. Rotate the charging assembly counterclockwise and thread it off the charging valve (9) of the Vertical LIVE Mount.

13. Perform Vertical LIVE Mount (10) valve leak test by plugging drain holes (4, figure 2) and fill cavity with water.
14. Observe charge valve (9) for 60 seconds; no air bubbles in water are allowed.
15. If air bubbles are present, open drain holes (4) and drain water and dry cavity.
 - a. Depressurize the Vertical Live Mount (refer to Depressurizing Procedure per bulletin).
 - b. Remove the valve core using valve core tool P/N 2316C or equivalent and clean valve and valve seat with isopropyl alcohol (C-285). Replace valve core (9) if damaged.
 - c. Re-install valve core and repeat "Initial Pressure Leak Check".

De-pressurizing Vertical LIVE Mount as Installed in Aircraft

1. If not already accomplished perform "Initial Pressure Leak Check" prior to depressurizing the Vertical LIVE Mount.
2. Ensure the charging assembly is in the 'closed' position by rotating the T- handle on the inflation connection (1) counterclockwise until snug.

CAUTION

**DO NOT USE THE MANOMETER TO TIGHTEN. DO NOT
USE A WRENCH ON ANY OF THE OTHER
CONNECTIONS ON THIS ASSEMBLY.**

3. Install the charging assembly valve extension end (6) onto the charging valve (9) by rotating it clockwise by hand until snug, and then tighten an additional $\frac{1}{4}$ turn by hand. (Refer to figure 1).

CAUTION

**TO PREVENT FLUID LOSS DURING DISCHARGE
ROTATE T-HANDLE ON INFLATION VALVE (1) SLOWLY
TO RELEASE NITROGEN PRESSURE.**

4. Slowly depress the charging valve core pin (8) by rotating the T-handle on the inflation connection (1) clockwise by hand and allow the nitrogen to slowly discharge then completely open T-handle on inflation connection (1) until it stops.

-NOTE-

After 30 minutes, the nitrogen may not be completely removed from fluid (e.g. bubbles may still be apparent in fluid), but acceptable to recharge Vertical LIVE Mount.

5. Wait 30 minutes with valve in the open position to allow most of the nitrogen to dissipate from the fluid.

Charging Vertical LIVE Mount as Installed in Aircraft

1. If not already accomplished perform “De-pressurizing of the Vertical LIVE Mount”
2. Ensure the charging assembly is in the ‘closed’ position by rotating the T-Handle on the inflation connection (1) counterclockwise until snug.
3. Attach the nitrogen supply to the connection fitting (5).
4. Open the valve on the nitrogen supply and adjust nitrogen supply regulator until manometer (4) reads between 325 to 340 psi.

CAUTION

IF PRESSURE EXCEEDS 450 PSI, THE VERTICAL LIVE MOUNT MAY BE DAMAGE AND SHOULD BE REPLACED.

5. Slowly depress the charging valve core pin (8) by rotating the T-handle on the inflation connection (1) clockwise by hand until it stops.
6. After the valve has been opened make the necessary adjustments to the nitrogen supply in order to stabilize the pressure between 325 to 340 psi. The stabilized pressure should be maintained for approximately 2 minutes to ensure no leaks are present in the charging system.
7. Rotate the T-handle on the inflation connection (1) counterclockwise by hand to retract the valve core pin (8) and close the charging valve.
8. Close nitrogen supply valve and remove nitrogen supply from charging assembly
9. Remove the charging assembly for the Vertical LIVE Mount by using a wrench on the lower hex of valve extension (6).
10. Rotate the charging assembly counterclockwise and thread it off the charging valve (9) of the Vertical LIVE Mount.
11. Perform Vertical LIVE Mount (10) valve leak check by plugging drain holes (4, figure 2) and fill cavity with water.
12. Observe charge valve (9) for a minimum of 3 minutes; no air bubbles in water are allowed.
13. If air bubbles are present, open drain holes (4) and drain water and dry cavity.
 - a. Depressurize the Vertical Live Mount (refer to Depressurizing Procedure per bulletin).
 - b. Remove the valve core using valve core tool P/N 2316C or equivalent and clean valve and valve seat with isopropyl alcohol (C-285). Replace valve core (9) if damaged.
 - c. Re-install valve core and repeat “Initial Pressure Leak Check”.

-NOTE-

Verify if any packing debris are present in charging valve (9).

14. Reinstall charging valve yellow cap (3) and torque to 20 to 30 in/lbs (2.25 to 3.38 Nm).

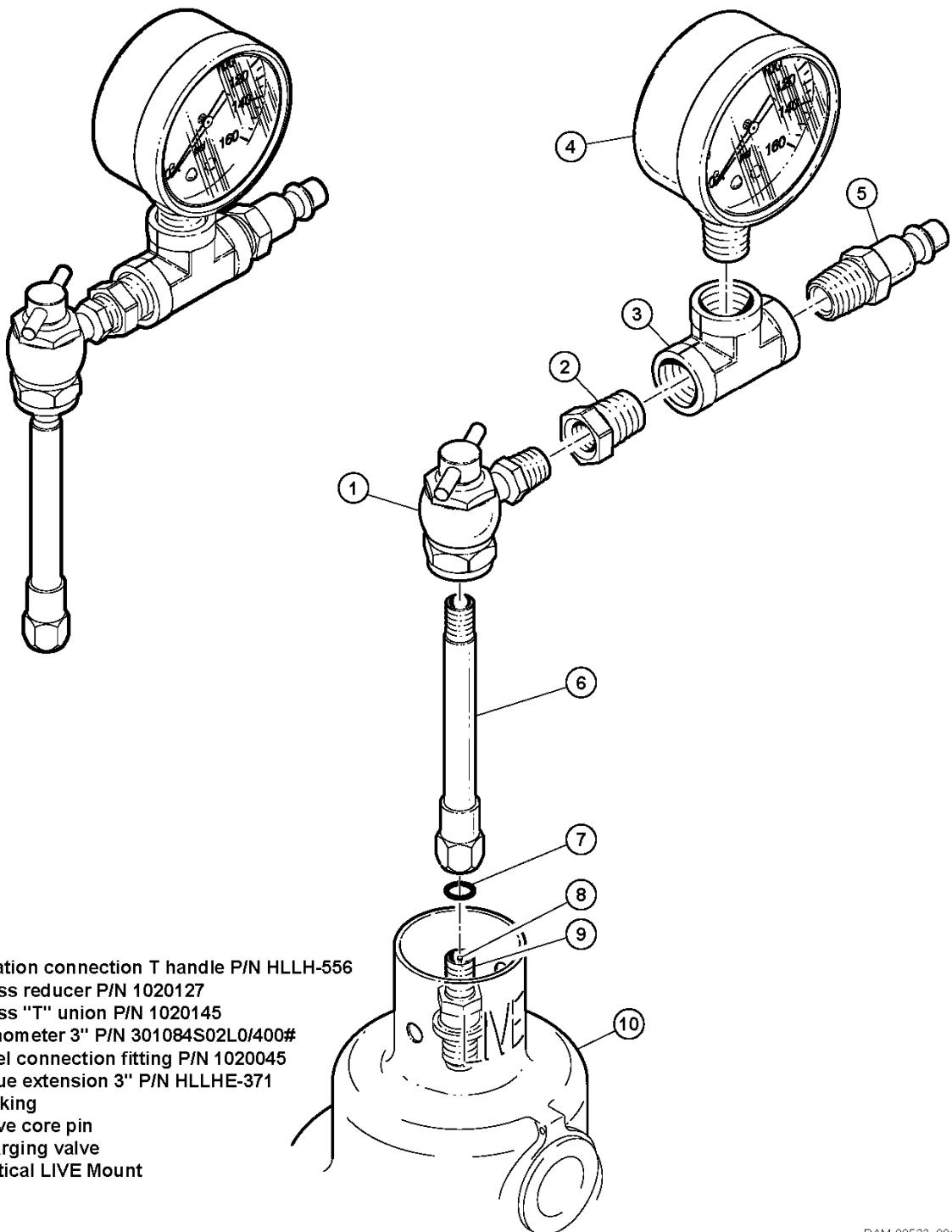
-NOTE-

Fluid level after initial charge may be below the sight glass until nitrogen is equalized in the fluid. The nitrogen equalization and associated fluid level will only happen after aircraft has flown for a short period of time (approximately 15 minutes) with the Vertical LIVE Mount re-pressurized. Fluid level after nitrogen equalization should be within the approximate range according to the following chart.

Ambient Temperature °F (°C)	Minimum Fluid Level in Sight Glass	Maximum Fluid Level in Sight Glass
-40°F (-40°C)	Below	1/3
70°F (21°C)	1/3	2/3
140°F (60°C)	2/3	Above

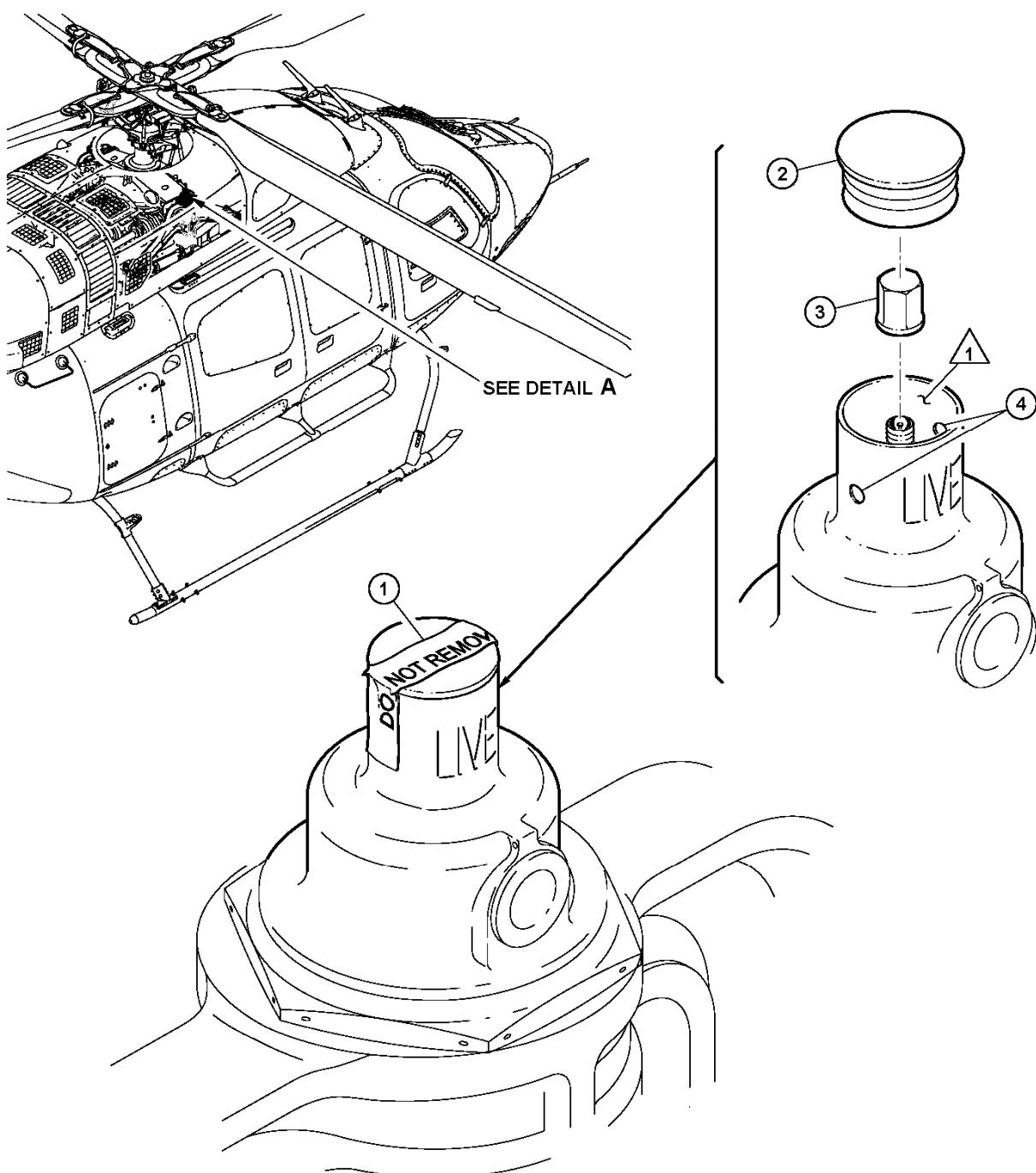
15. Install transmission cowling 600EL and 600ER.

16. Annotate helicopter records to reflect compliance with this bulletin.



RAM 08523_001

Figure 1



1. Tamper proof tape
2. Plastic plug
3. Schrader valve yellow protective cap
4. Drain holes

DETAIL A

NOTE

 Leak check, fill cavity with water.

RAM 08523 002

Figure 2